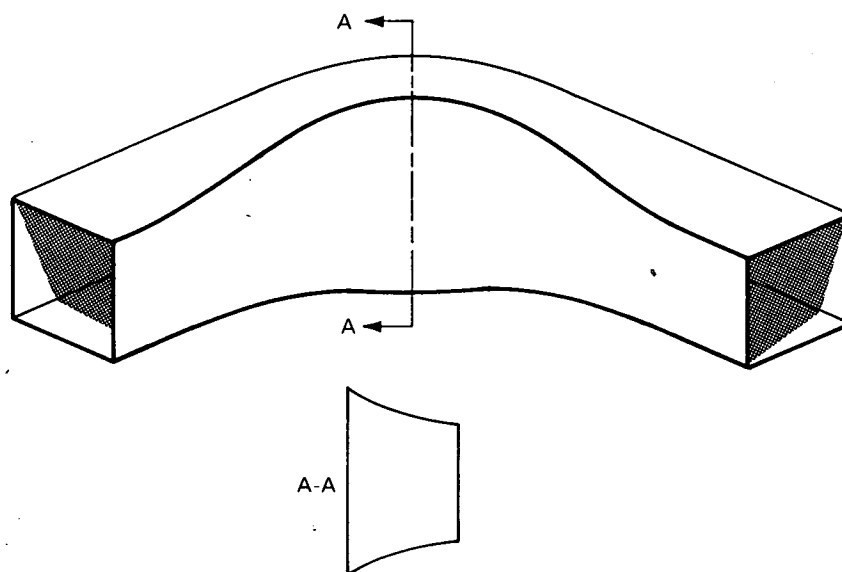


NASA TECH BRIEF



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Design of Fluid-Duct Bends with Low Pressure Loss



Formulas have been derived to enable the design of duct bends in which pressure losses and velocity profile distortions due to centrifugal force gradients are significantly reduced. The correction is achieved by properly changing the cross sectional area through the bend without affecting the shape of the duct at the upstream and downstream sides. This correction can be applied equally well to ducts of any specified cross sectional shape. The illustration shows a corrected square-duct bend that has been built and tested. This bend effected a reduction of 40 percent in pressure drop compared with a similiar uncorrected square-duct bend.

Note:

Details may be obtained from:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B68-10395

Patent status:

No patent action is contemplated by NASA.

Source: R. Gerlach
of Southwest Research Institute
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Category 05